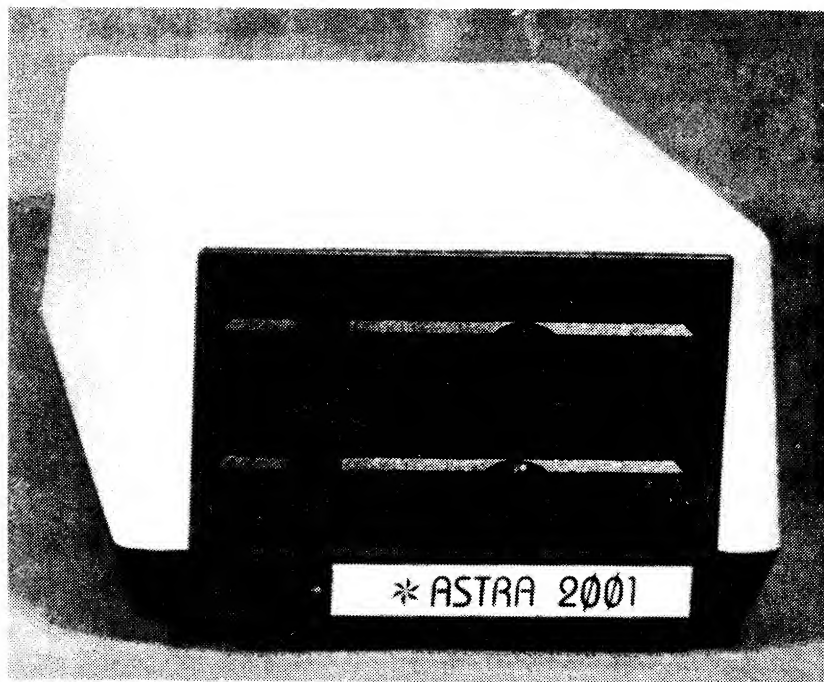


# **AND NOW ASTRA HAS THREE MODELS FOR YOUR ATARI**

## **ASTRA 1620**

Our original single or double density dual disc drive.  
Two drives, for the price of one.  
(360 KBYTES)



## **ASTRA 2001**

All of the features  
of the 1620, but  
with improved  
circuitry, rotary  
doors, and direct  
drive motors.  
(360 KBYTES)

## **ASTRA "BIG D"**

Double sided, single or double density,  
dual disk drive.  
(720 KBYTES)

**ALL DRIVES FURNISHED WITH  
SMARTDOS OR MYDOS \***

*\*DOUBLE SIDED DRIVES*

**FOR NEAREST DEALER OR DISTRIBUTOR  
CALL (714) 549-2141**

**\*ASTRA SYSTEMS**

2500 South Fairview • unit L • Santa Ana, Ca. 92704

# \*ASTRA SYSTEMS, INC.

Thank you for your recent inquiry regarding Astra Systems.

At the present time we are manufacturing three drives for the Atari Computers.

All of these are compatible with new Atari line (800XL-600XL) as well as the original and intermediate units (400,800,1200XL).

We are enclosing a copy of our recent ad which is running in "Antic" and "Analog" magazines. It outlines the three models mentioned above.

We are also enclosing an insert which answers the most common questions about our drives.

If you have any additional questions please feel free to contact me at Astra Systems.

Thank you,

Louis A. Schwing  
President

## ASTRA SYSTEMS, INC.

### DISK DRIVES WITH A DIFFERENCE!

#### THE "MORE USEFUL" PERIPHERALS

Astra disk drive systems provide you with two high quality half-height disk drives in one attractively styled cabinet. The drive mechanisms feature direct drive motors for better reliability and more critical speed control.

#### WHY TWO DRIVES?

One disk drive is simply not adequate for any but the most superficial application. If you are using your computer for word processing, spreadsheet analysis, or data base management; if you back up your disks regularly; or if you use your computer in a business application, then a two drive system is an ideal configuration. Many of the more sophisticated programs are modular in nature, requiring that a system disk be present in drive #1 throughout your computing session (except when you are saving or loading files). With a dual drive system that's no problem: simply leave your system disk in drive #1, place your data disk in drive #2 and forget about the onerous and error-prone chore of disk swapping.

#### SINGLE OR DOUBLE DENSITY

Astra drives offer you the choice of single or double density data storage. In single density, disk capacity is 90 Kilobytes, but in double density that jumps us to 180 Kilobytes per drive. Thus, if both your drives are configured as double density, your on-line storage is a whopping 360 Kilobytes!

#### SINGLE OR DOUBLE SIDED

We also offer a model called the Big D. In addition to the dual drive, double density capacity of the Astra 2001, the Big D features double sided drives. Now, your storage capacity soars to nearly 3/4 Megabytes!! That's serious storage.

The Big D is meant to serve the large file-handling and data storage needs of those people using their computers in business and for telecomputing through bulletin board systems and large databases such as the Source and CompuServe.

#### EASY TO USE - EASY TO LOVE

Astra drives are ready to be plugged in, turned on, and used as soon as they come out of the box. We ship them with everything you need to begin enjoying your new-found storage capacity; I/O cable, Warranty Card, Manual, and a superior Disk Operating System.

Astra 2001s come with SMARTDOS, the most sophisticated and friendliest DOS ever produced for Atari computers. Astra Big Ds are shipped with MYDOS. MYDOS is the only double sided DOS worth considering for Atari computers. Its ease-of-use rivals that of SMARTDOS and it gives you effortless access to both sides of your disks.

DISK DRIVE SPECIFICATIONS  
ASTRA SYSTEMS 2001 DUAL DRIVE UNITS

FUNCTION		CHARACTERISTICS (each drive)	
		Single density	double density
Encoding Method	FM		MFM
Diskette type	ANSI Standard		ANSI Standard
Storage Capacity			
Unformatted*	90 K Bytes		180 K bytes
Formatted*	88 K Bytes		176 K Bytes
Data Transfer Rate (MFM)	125 kilobits/sec		250 kilobits/sec
Number of R/W Heads	one*		one*
		COMMON CHARACTERISTICS	
Tracks	40		
Rotational Speed	290 RPM +- 1%		
Track Density	48 Tracks per inch		
Rotational Latency Average	100 Milliseconds		
Access Time			
Track-to-track	6-20 msec		
Step Settling Time	15-20 msec		
Average	93-275 msec (incl settling time)		
Turnaround Time	20-35 msec		
Head Switching Time	200 microseconds		
Read/Write Head	Single-sided, w/tunnel erase*		
Reliability			
MTBF	10,000 POH		
MTTR	0.5 hour		
Read Errors			
Recoverable	Less than 1 in 10 billion		
Non-Recoverable	Less than 1 in 10 trillion		
Seek Errors	Less than 1 in 10 million		

\* With the Astra Big D, there are two read/write heads per drive, and the storage capacity figures are exactly twice these figures.

## ASTRA SYSTEMS DISK DRIVES

### HERE ARE SOME OF THE MOST OFTEN ASKED QUESTIONS ABOUT ASTRA DISK DRIVES

Q--Are the ASTRA drives compatible with all software written for the Atari line of computers?

A--We have tested over 650 software packages on the ASTRA drives and have found that they are the most compatible of any of the third-party drives. Some software publishers employ elaborate copy-protection schemes which may cause difficulty in loading from time to time. Some versions of LETTER PERFECT and DATA PERFECT exhibit unusual formatting methods, but we have found that disks formatted through a normal DOS will work perfectly with those software products. In short, the ASTRA drives are highly compatible with normally written software for Atari computers.

Q--Will the ASTRAS work with the new Atari XL computers?

A--ASTRA drives were designed with the new computers in mind and will work with them superbly. The ASTRA colors were chosen to complement the XL computers. Not to be left out, ASTRA drives work just as well with the older 400, 800, and 1200XL computers, too.

Q--How can I take advantage of double density storage while using some of the commercial word processing programs?

A--Since the ASTRA drives contain their own computers, all that is necessary is to "boot" the drive with a DOS disk, and reconfigure Drive #2 as double-density. Then, leaving your drive on, insert your word processing system disk in Drive #1, turn the COMPUTER off, then on again. Then, whenever you save text to a file on Drive #2 it is automatically saved in double-density.

Q--I understand that a DOS system is very important to using a disk drive to its full advantage.

A--This is very true. For that reason we are pleased to include, at no extra charge, the most powerful DOS made for Atari computers: SMARTDOS. SMARTDOS is supplied with every ASTRA 1620 and 2001. With the ASTRA Big D, we supply a well-designed double-sided DOS called MYDOS.

Q--Can ASTRA drives be made to answer as anything but Drives #1 and #2?

A--Yes. Full instructions are included with each unit.

Q--Do ASTRA drives support the Atari "enhanced density" of DOS III?

A--No. DOS III makes little sense compared to a full double-density DOS and we can see little need for support of this format. In all applications we have reviewed, we were able to use double-density whenever "enhanced density" was called for. To the best of our knowledge, Atari Corp. has no plans to publish any programs in this format.

Q--We have seen ads for other disk drives showing a lot of information that can be displayed. Do the ASTRA drives have this and is it helpful?

A--ASTRA drives were designed to function perfectly well without the "bells and whistles" found on some other units. Most of the displayed information is of little or no use and simply adds to the cost of the unit while degrading its reliability. ASTRA drives offer the advantages of two drives and true double-density in one low-priced unit. Besides, SMARTDOS provides you with most of the status information on screen (where it belongs).

Q--Are the drives in the ASTRAS belt-driven or direct-drive?

A--In the 1620s, the drives are belt driven, whereas those in both the 2001 and the Big D are direct drive units. The belt driven 1620s are reliable and adequate for most home applications, while the direct drive units are preferred for heavier-duty business applications.

PRODUCT ANNOUNCEMENT

ADVANCED PROGRAMMER'S EQUIPMENT is proud to announce its appointment as an Astra Systems dealer. We currently offer the entire dual disk drive line.

Because we are limiting the lines that we carry, we are able to deliver a highly desirable product at a very low price.

Call us today to place your order. (714) 557-5174.

# SPECIAL

ORDER FORM

- |     |                 |   |                               |       |
|-----|-----------------|---|-------------------------------|-------|
| [ ] | ASTRA 1620      | <del>\$399.00</del> <sup>325<sup>00</sup></sup> | + \$10.00 S/H--TOTAL \$409.00 | _____ |
| [ ] | ASTRA 2001      | <del>\$599.00</del> <sup>495<sup>00</sup></sup> | + \$10.00 S/H--TOTAL \$609.00 | _____ |
| [ ] | ASTRA BIG D     | <del>\$645.00</del> <sup>598<sup>00</sup></sup> | + \$10.00 S/H--TOTAL \$655.00 | _____ |
| [ ] | DISK DOUBLER    | \$ 14.95 + \$ 1.50 S/H--TOTAL \$ 16.45          |                               | _____ |
| [ ] | 5' I/O CABLE    | \$ 12.95 + \$ 1.50 S/H--TOTAL \$ 14.45          |                               | _____ |
| [ ] | FOOT LONG CABLE | \$ 8.50 + \$ 1.50 S/H--TOTAL \$ 10.00           |                               | _____ |

SUB TOTAL \_\_\_\_\_

CA RES. ADD SALES TAX \_\_\_\_\_

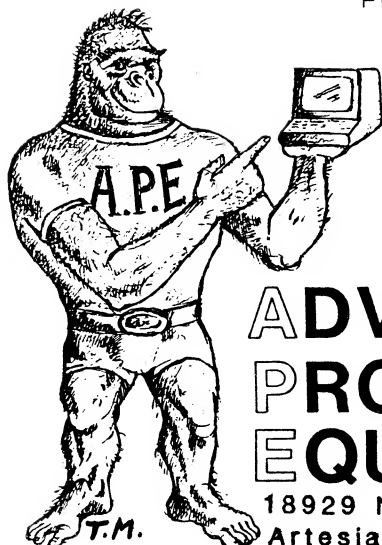
TOTAL \_\_\_\_\_

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ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ ST \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_ (\_\_\_\_) \_\_\_\_\_



## ADVANCED PROGRAMMER'S EQUIPMENT

18929 Norwalk Blyd. Suite 193,  
Artesia, California 90701

[ ] PAYMENT ENCLOSED

[ ] CREDIT CARD

[ ] VISA [ ] MASTERCARD

CARD # \_\_\_\_\_

EXP. DATE (MO./YR.) \_\_\_\_\_

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## **YOU HAVE ALREADY MADE YOUR FIRST MISTAKE!**

You thought that cassette recorder  
would handle your storage needs.

**WRONG**

## **DON'T MAKE ANOTHER ONE!**

You think you need a disk drive to  
solve your storage problems.

**WRONG**

## **YOU NEED 2 DISK DRIVES!**

Any serious application practically  
demands at least 2 drives.

**WORD PROCESSING**

**SPREADSHEET**

**DATA BASE MANAGEMENT**

**MAILING LIST SOFTWARE**

All of these are made more powerful  
and, at the same time, easier to use if  
you have two disk drives.

So now it will cost twice as much,  
right?

**WRONG**

You need an Astra single or double  
density dual disk drive. Two drives  
in one

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